

What is claimed is:

1. An image processing method for eliminating noise from electronic data of an input image by smoothing the electronic data, the method comprising:

5 an intensity computation step for computing smoothing intensity to be used for smoothing the electronic data, from intensity of a predetermined color component output from a pixel of interest and from intensity of predetermined color components output from surrounding pixels constituting a matrix centered  
10 on the pixel of interest,

wherein the smoothing intensity is set on the basis of a relationship between the intensity of a predetermined color component and the frequency of noise, and

wherein when the intensity of a predetermined color  
15 component output from the pixel of interest is high, a rate at which the intensity of the predetermined color component output from the pixel of interest is to be distributed to surrounding pixels constituting the matrix is set to a large value, and when the intensity of the predetermined color  
20 component output from the pixel of interest is low, the rate at which the intensity of the predetermined color component output from the pixel of interest is to be distributed to surrounding pixels constituting the matrix is set to a small value.

2. The image processing method according to claim 1, further comprising:

a filter information selection step of selecting predetermined filter information on the basis of the smoothing intensity computed in the intensity computation step; and  
a smoothing step of smoothing the electronic data on the basis of the filter information computed in the filter information preparation step.

3. The image processing method according to claim 1, further comprising:

a filter information preparation step of preparing filter information on the basis of the smoothing intensity computed in the intensity computation step; and

a smoothing step of smoothing the electronic data on the basis of the filter information selected in the filter information selection step.

4. A recording medium storing an image processing program for causing a computer to perform processing for eliminating noise from electronic data pertaining to an image entered by way of input unit, by smoothing the electronic data, the computer being caused by the image processing program to perform:

an intensity computation step for computing smoothing intensity to be used for smoothing the electronic data, from

the intensity of a predetermined color component output from a pixel of interest from among a plurality of pixels constituting an image input by way of the input unit and from the intensity of predetermined color components output from surrounding  
5 pixels constituting a matrix centered on the pixel of interest; and

a smoothing step for smoothing the electronic data through use of the computed smoothing intensity and outputting the smoothed electronic data;

10 wherein the smoothing intensity is set on the basis of a relationship between the intensity of a predetermined color component and the frequency of noise, and

wherein when the intensity of a predetermined color component output from the pixel of interest is high, a rate  
15 at which the intensity of the predetermined color component output from the pixel of interest is to be distributed to surrounding pixels constituting the matrix is set to a large value, and when the intensity of the predetermined color component output from the pixel of interest is low, the rate  
20 at which the intensity of the predetermined color component output from the pixel of interest is to be distributed to surrounding pixels constituting the matrix is set to a small value.

25 5. The recording medium according to claim 4, wherein the

computer is caused to perform a filter information selection step of selecting predetermined filter information, on the basis of the smoothing intensity computed in accordance with the intensity computation procedure, and

5            wherein, in the smoothing step, the electronic data are smoothed and output through use of the filter information selected through the filter information selection procedure.

6.        The recording medium according to claim 4, wherein the  
10        computer is caused to perform a filter information preparation step of preparing filter information on the basis of the smoothing intensity computed in the intensity computation step, and

          wherein, in the smoothing step, the electronic data are  
15        smoothed and output through use of the filter information prepared through the filter information preparation procedure.

7.        An image processing apparatus comprising:  
          an image input unit into which image information is input  
20        and which can output the image information as electronic data;  
          and

          an intensity computation unit for computing smoothing  
          intensity to be used for smoothing the electronic data, from  
          the intensity of a predetermined color component included in  
25        the electronic data output from the image input unit,

wherein the smoothing intensity is set on the basis of a relationship between the intensity of a predetermined color component and the frequency of noise, and

wherein when the intensity of a predetermined color component output from the pixel of interest is high, a rate at which the intensity of the predetermined color component output from the pixel of interest is to be distributed to surrounding pixels constituting the matrix is set to a large value, and when the intensity of the predetermined color component output from the pixel of interest is low, the rate at which the intensity of the predetermined color component output from the pixel of interest is to be distributed to surrounding pixels constituting the matrix is set to a small value.

8. The image processing apparatus according to claim 7, further comprising:

a recording section in which filter information set beforehand on the basis of smoothing intensity computed by the intensity computation unit is recorded;

a filter information selection unit for selecting specific filter information from the filter information recorded in the recording section on the basis of the smoothing intensity computed by the intensity computation unit;

a smoothing unit for smoothing the electronic data output

from the image input unit on the basis of the specific filter information selected by the filter information selection unit; and

5 a writing unit for recording the electronic data smoothed by the smoothing unit into the recording section.

9. The image processing apparatus according to claim 7, further comprising:

10 a filter information preparation unit for preparing filter information on the basis of smoothing intensity computed by the intensity computation unit;

a smoothing unit for smoothing the electronic data output from the image input unit on the basis of the filter information prepared by the filter information preparation unit;

15 a recording section capable of recording the electronic data smoothed by the smoothing unit; and

a writing unit for writing the electronic data smoothed by the smoothing unit into the recording section.